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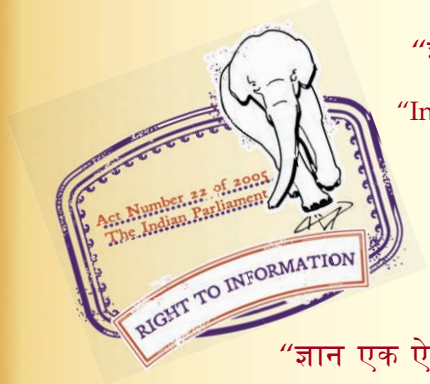

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NEW DELHI 110002

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SPECIFICATION FOR MONOCULAR DISSECTING MICROSCOPE

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Indian Standard

SPECIFICATION FOR MONOCULAR DISSECTING MICROSCOPE

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 25 October 1967, after the draft finalized by the Optical and Mathematical Instruments Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 Monocular dissecting microscope is a simple microscope mounted on strong base for hand rest and a transparent stage for holding and dissecting specimens.

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1. SCOPE

1.1 This standard covers the general and functional requirements of the monocular dissecting microscope.

2. TERMINOLOGY

2.0 For the purpose of this standard, the definitions given in IS : 1399-1959* and the following definitions shall apply.

2.1 Base — Horizontal platform on which the pillar is mounted.

2.2 Handrest — Plates of a suitable material inclined at an angle on either side of the stage meant for resting hands during manipulation on the instruments.

2.3 Pillar — The pillar supports the stage with handrests and carries the magnifier.

2.4 Reflector — Device for reflecting the light from a light source in the direction of the specimen under examination or operation on the stage.

2.5 Stage — Platform on which the examination of specimen is to be carried out.

*Glossary of terms used in optical technology.

3. GENERAL REQUIREMENTS

3.1 The material used for mechanical and optical parts shall conform to **3.1** of IS : 2754-1964*.

3.2 The design and construction of the base shall be such and of such material as to make it stable.

3.3 The pillar shall carry the sliding spindle movable up and down by rack and pinion, by rotation of the milled head knobs provided on both sides.

3.4 The spindle shall carry the swinging arm holding the magnifier.

3.5 The swinging arm carrying the magnifier shall be so designed that it shall be possible to scan the entire stage and its movement shall be in a plane parallel to that of the stage.

3.6 The stage shall be made of sheet or plate glass of suitable thickness and its size shall not be less than 70 mm in diameter when round or 70 × 90 mm when rectangular. Spring clips shall be fixed on the stage for holding the specimen.

3.7 The handrests shall be of detachable type made from suitable material and shall be rigid. They shall be at an inclination of 15° to 20° downward to the plane of the stage.

3.8 The sub-stage reflector shall be a combination of one plane mirror and one mattopal glass and shall have a diameter of 51^{+0}_{-1} mm inclusive of mount. The sub-stage reflector shall be capable of rotating in all directions.

4. FUNCTIONAL REQUIREMENTS

4.1 The magnifier shall have a minimum magnification of 10 ×. The maximum magnification shall not exceed 20 ×.

4.2 The range of focusing of the magnifier shall not be less than 40 mm.

4.3 Magnifiers may be of simple doublet, achromatic, aplanatic, Coddington, wide-field or any other suitable type. For magnification above 12 ×, simple doublet system shall not be used.

4.4 The magnifier shall have a clamping diameter of 21h8 mm. The swinging arm holding the magnifier shall have an internal diameter of 21G7 mm when unclamped (*see* IS : 919-1963†).

4.5 In case of simple doublet or Coddington lens, it shall have at least two-thirds of the field, flat and free from colour defects.

*General requirements for optical instruments.

†Recommendations for limits and fits for engineering (*revised*).

4.6 Achromatic, aplanatic and wide-field magnifiers shall fulfil their respective characteristics.

4.7 The rack and pinion arrangement shall be such that when moved through its full range, the movement shall be smooth and even and shall have no appreciable backlash. There shall also be no movement of the sliding spindle at any position of observation under gravity.

5. TESTS

5.1 Focal length of the magnifier shall be measured by any of the methods given in Appendix C of IS : 988-1959*. Magnification shall then be calculated by the formula given in **4.2.5** of IS : 2754-1964†.

6. MARKING

6.1 The microscopes shall be marked legibly and indelibly with the manufacturer's name or trade-mark and serial number. When desired by the purchaser, the year of manufacture shall also be marked on the instrument.

6.2 The magnification shall be marked on the magnifier in such a position where it shall be visible when the magnifier is fitted in the microscope.

6.3 The magnifier shall be regarded as simple doublet type unless otherwise marked by the following abbreviations:

Ach — Achromatic

Apl — Aplanatic

W.F. — Wide field

Cod — Coddington

6.3.1 The microscopes may be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

*General requirements for optical components.

†General requirements for optical instruments.

7. PACKING

The instrument shall be supplied in a convenient case made of wood or any other suitable material. The case shall be suitably padded and provided with proper supports at various points.

7.2 The instrument in its case shall be suitably packed for transit.

7.3 The package shall be marked with the standard symbol for indicating fragile contents according to IS : 1286-1958*, together with the legend 'INSTRUMENT, HANDLE WITH CARE' in red and also the symbol for 'RIGHT-WAY UP'.

*Pictorial markings for handling instructions for non-dangerous goods.

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